PROFILE OF

SANDIA NATIONAL LABORATORIES/CALIFORNIA

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Office of Oversight
Environment, Safety and Health
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FOREWORD

Site profiles provide senior Office of Environment, Safety and Health managers with relevant and current site environment, safety, and health performance information as well as communicating to Department of Energy line management the Office of Oversight's concerns and understanding of site conditions. Site profiles are a key management tool used by the Office of Oversight to focus and prioritize independent oversight evaluation activities and to optimize the allocation of Oversight resources. The Office of Oversight maintains site profiles on 20 major Department of Energy sites, and normally updates each profile semiannually through a process of soliciting Department of Energy line management review and comment on the revised site profile information. Upon resolution of any line management comments, the profile is considered validated and is disseminated.

Site profiles are developed using an institutionalized process of collecting data from multiple sources, and then collating, synthesizing, and analyzing this information to develop a balanced evaluation of environment, safety, and health performance at the site. The data that forms the basis of a site profile comes from sources both internal and external to the Department of Energy. Office of Oversight appraisal activities provide an important source of data. Data is also collected and synthesized from such sources as the Defense Nuclear Facilities Safety Board, the General Accounting Office, state regulators, and Department of Energy line management organizations. This information is reported in a format designed to highlight essential missions, performance, significant issues, and operational data at a management level. The process involves additional field verification of initial conclusions to confirm the validity and significance of the information. All Oversight offices participate in the collection, analysis, interpretation, and validation of site profile information.

As the site profile process matures, the Office of Oversight plans to incorporate additional information into the documents, including a presentation of quantitative measures and trends in environment, safety, and health performance, and a description of safeguards and security activities, performance, and issues.

PROFILE OF

SANDIA NATIONAL LABORATORIES/CALIFORNIA (SNL/CA)

OVERVIEW

SITE CHARACTERISTICS

Site characteristics include information on size and location, mission, organization, contractual status, and major initiatives and activities.

Additional information on site characteristics is provided in Section 1.0, starting on page 1.

Date Established: March 1956.

Present Mission: The principal mission of Sandia National Laboratories/California (SNL/CA) is to implement national nuclear weapons policy through research, development, and testing of non-nuclear elements of nuclear ordinance; arms control verification; and weapons surety to create advanced solutions and prototypes that enhance the security, prosperity, and well-being of the nation. SNL/CA also has extensive programs in combustion science, semiconductor technologies, and advanced manufacturing .

Sandia California continues its primary mission of implementing national nuclear weapons policy.

Size: 413 acres (0.7 square miles).

Employees: The onsite population of SNL/CA, including contractor employees, is 1,320. SNL/CA has 972 employees and approximately 278 contractors on site. (as of February 1996).

Annual Budget: The budget for fiscal year 1996 is $1.43 billion for Sandia National Laboratories.

Sandia National Laboratories' budget incorporates multiple sites.

Cognizant Secretarial Officer: The Assistant Secretary for Defense Programs is the Cognizant Secretarial Officer. Several DOE program offices maintain an interest in SNL, as shown in the summary table below:

DOE Programs	$ Millions	
	FY95	FY96
Defense Programs	87.6	81.8
Env. Restoration and Waste Management	7.4	10.2
Energy Efficiency and Renewable Energy	5.8	5.1
Energy Research	12.8	12.1
Fossil Energy	0.5	0.7

Multiple program offices have programmatic interest at Sandia California.

Responsible Operations/Area Office: DOE Albuquerque Operations Office (AL); the Kirtland Area Office (KAO).

Management and Operating Contractor: Lockheed Martin Corporation.

Fissile Material: Less than 10 grams.

Significant Commitments to Stakeholders: *Directives from the Bay Area Regional Water Quality Control Board*. This directive addresses cleanup expectations on the 1975 diesel oil spill remediation site.

Several local requirements guide Sandia/California activities.

T*he Bay Area Regional Water Quality Control Board Cleanup Order*. This order, issued in 1985, was revised in 1988 and 1989. The order calls for remediation of all contaminated sites but does not contain a required schedule for completion. Funding for site remediation was recently approved, and SNL/CA is projecting cleanup by 2000.

State of California Authorization to the Bay Area Air Quality Monitoring Department to regulate Point Sources. SNL/CA is permitted for point sources only.

Notices of Violation (NOV) from the City of Livermore for "Exceedance of City Wastewater Discharge Permit #1251 (94-95) for Silver" and for zinc. Laboratory results from the SNL/CA sanitary sewer outfall monitoring system showed a silver concentration of 0.27 ppm and 4.5 ppm for zinc. The allowable limit for silver concentration under The City of Livermore Wastewater Discharge Permit #1251 (94-95) is 0.20 ppm.

Unions: None

Major Site Activities/Initiatives:

SNL/CA is in the final stages of remediating a diesel oil spill.

The Tritium Research Laboratory has been reclassified as a radiological facilities.

A new medical facility was completed in November 1995.

Upgrades of the Combustion Research Facility continue.

ENVIRONMENT, SAFETY, AND HEALTH (ES&H) ISSUES

Additional information on sitewide issues is provided in Section 3.0 starting on page 5.

A sitewide issue is an issue present at multiple facilities or within ES&H programs that impact sitewide operations. A facility-specific issue is limited to a particular facility or building.

Sitewide Issue 1: KAO has not assured that SNL/CA has established and implemented a suspect/counterfeit parts program fully consistent with DOE directives.

Sitewide Issue 2: A lawsuit was filed in Alameda County, California, on May 27, 1994, based on a potential exposure to hydrogen sulfide of an electrician who was working in the loft of the Combustion Research Facility .

Sitewide Issue 3: Recent conduct of operations events indicate an adverse occupational safety trend. During the last three years, eight events have had a direct impact on occupational safety.

Sitewide Issue 4: In 1975, an oil transfer line was punctured, and about 60,000 gallons of No. 2 diesel oil flowed into the ground Currently, a bioremediation program is in progress and should be completed by October 1999.

There are four sitewide issues at Sandia/ California.

KEY FACILITIES

A key facility is a facility or building that is significant from an environment, safety, and health perspective. At some sites, a key facility can be a group of facilities with similar missions, activities, hazards, or vulnerabilities.

Buildings 904,905,906,907 Combustion Research Facility (CRF)

Current and future use is combustion research, ranging from basic research on chemical reactivity, fluid dynamics, and computational modeling to applied studies in engines, furnaces, and material processing.

Additional information on key facilities is provided in Section 4.0, starting on page 6.

Explosive Storage and Testing Facilities

Store and test explosives and components that use explosives.

There are two key facilities at Sandia/California.

SITE PERFORMANCE

Site performance is based on an analysis of available data on facilities and programs. This includes information from the Office of Oversight activities augmented by valid and relevant external and internal sources. Site performance is evaluated in terms of three of the guiding principles for safety management.

Overall Safety Management Program - NOT EVALUATED

Principle #1 - Line Management Responsibility - NOT EVALUATED

Overall, line management has accepted its responsibility for safety and has been aggressive in its efforts to reduce accidents.

KAO does not have any full-time employees assigned at SNL/CA One Facility Representative visits the site about one week every two

Additional information on site performance is provided in Section 2.0, starting on page 2.

months. A KAO management representative visits the site about once a quarter.

Responsibility is adequately defined; however, the level of effort does not assure comprehensive monitoring of all ES&H commitments.

SNL/CA has dedicated adequate resources for hazards management. Weaknesses developed in some programs, such as the suspect/counterfeit parts program, when SNL and KAO did not provide specific guidance and follow up.

Principle #2 - Comprehensive Requirements - NOT EVALUATED

KAO has provided SNL with comprehensive ES&H requirements. SNL has not always passed on those requirements to SNL/CA in a timely manner.

SNL/CA has not always assured that its actions fully address the safety concerns.

Development of ES&H procedures is sometimes slow, and the procedures are not always complete.

Principle #3 - Competence of Personnel - NOT EVALUATED

The KAO Facility Representative assigned to SNL/CA has an appropriate academic background and is well into completing the Facility Representative qualification program.

No competency issues have been raised concerning SNL/CA ES&H personnel.

PERFORMANCE MEASURES

Performance measures are quantitative and qualitative indications of ES&H performance taken from such sources as the Occurrence Reporting and Processing System and the Computerized Accident/Incident Reporting System, as well as contractually mandated indicators of performance.

To be provided in future versions of the site profile.

Additional information on performance measures will be provided in Section 5.0 of future versions of the site profile.

Figure 1. SNL/CA Map

SITE PROFILE -- SANDIA NATIONAL LABORATORIES/CALIFORNIA

1.0 SITE CHARACTERISTICS

1.1 SITE LOCATION AND SIZE

Sandia National Laboratories/California (SNL/CA) is located on 413 acres (0.7 square mile) 40 miles east of San Francisco, California.

1.2 SITE MISSION

The principal mission of SNL/CA is to implement national nuclear weapons policy through research, development, and testing of nuclear ordnance; arms control verification; and weapons surety to create advanced solutions and prototypes that enhance the security, prosperity, and well-being of the nation. This mission is achieved by being proactive stewards of the nation's nuclear weapon technologies and stockpile; creating effective solutions to important energy and environmental concerns; and forming strategic technology partnerships for national security and industrial competitiveness.

SNL/CA has extensive programs in combustion science, semiconductor manufacturing technologies, and advanced manufacturing technologies.

1.3 SITE ORGANIZATIONS AND CONTRACT STATUS

Site Organizations

The Albuquerque Operations Office (AL) is responsible for developing plans and estimates related to DOE's capability to develop and stockpile new weapons. AL carries out programs for nuclear weapons production, field non-nuclear testing, and stockpile maintenance and surveillance. AL implements its responsibilities through several area offices. The Kirtland Area Office (KAO), also located in Albuquerque, NM, is one of the AL area offices.

The KAO Area Manager has line management responsibility for activities at Sandia National Laboratories/New Mexico (SNL/NM), the Tonopah Test Range, SNL/CA, and the Kauai Test Range in Hawaii, and the Inhalation Toxicology Research Institute. KAO consists of four branches, including the Assistant Area Manager for Facilities and Project Management; the Assistant Area Manager for Operations; the Assistant Area Manager for Environment, Safety and Health; and the Assistant Area Manager for Security, Contracts, and Business Management.

KAO has assigned one Facility Representative responsibility for the SNL/CA site. This assignment is intended to account for about 50 percent of the Facility Representative's work load.

The onsite population of SNL/CA, includes 972 SNL/CA employees, 278 contractors, and 70 post-doctoral and limited term employees, and student interns. Of these, 566 are scientists and engineers.

Contract Status

SNL/CA is operated by the Lockheed Martin Corporation under a cost-plus-fixed-fee contract with DOE. SNL/CA is one of four sites operated for DOE by the Lockheed Martin Corporation. The Manager, KAO is the contracting officer's representative for the contract. The present contract began October 1, 1993, and will remain in effect through September 30, 1998. The estimated cost for fiscal year 1996 is $1.43 billion, with a fixed fee of $14,844,103. A fee for operating SNL/CA is not specified in the contract.

Significant activities are ongoing at AL in establishing an environment, safety, and

health (ES&H) management planning process; however, contractual requirements for ES&H management plan are lacking in most facilities' contracts.

1.4 MAJOR SITE INITIATIVES/ACTIVITIES

Waste Management

SNL/CA is actively remediating a diesel oil spill from 1975 and is closing a landfill that was once operated by the U.S. Navy before Sandia acquired the site.

Construction

The construction of a new 5,600 square foot medical building was completed in November 1995.

At the Combustion Research Facility (CRF), the CRF II shell has been built, and funding in the amount of $2 million has been received for the interior construction of additional laboratories in fiscal year 1996. Expected funding for fiscal year 1997 is $7 million, with an estimated total project cost of $30 million. The design for the office addition is nearing completion, and construction will begin in the summer of 1996. The work to complete the design for the lab building will also start at this time. If fiscal year 1997 and subsequent year funding is received, the construction will continue completing the lab building. Project construction and occupancy should be completed by fiscal year 2000.

Under General Planned Projects (GPP), $500,000 has been authorized to construct a new maintenance material storage building beginning in fiscal year 1996. The building will be used by maintenance for storing of associated hazardous materials. The design is completed; however, the SNL/NM corporate construction office has not given SNL/CA funds to start construction.

Some funding for interior remodeling and renovation of Building 911, which contains the Personnel, Visitor Control, and Purchasing Departments, has been received.

Also under GPP, $800,000 has been authorized for security infrastructure modifications.

Construction of a new remote badging post began in February 1996.

Decontamination and Decommissioning

SNL/CA has nearly finished decommissioning the Tritium Research Laboratory, Building 968. In an October 1995 report, SNL/CA documented detectable tritium in only two of 21 soil samples taken near the facility. SNL concluded that further characterization or remediation of the surface environment is not necessary. Transition efforts are well underway with reapplication expected to be completed in 1997.

Privatization Activities

None.

Programmatic Activities

None.

2.0 SITE PERFORMANCE

2.1 CONCEPTUAL BASIS FOR EVALUATION

The essential characteristic of successful programs and projects is the recognition and understanding of the need for an effective management system that ensures adequate control over all aspects of the program or project. In 1994, the Secretary of Energy forwarded to Congress and the Defense Nuclear Facilities Safety Board the principles and criteria that the Department deemed necessary for an effective safety management program. These principles include:

- Principle #1: Line managers are responsible and accountable for safety.
- Principle #2: Comprehensive requirements exist, are executed, and are appropriate.

- Principle #3: Competence is commensurate with responsibilities.

2.2 SAFETY MANAGEMENT PROGRAM IMPLEMENTATION OF THE GUIDING PRINCIPLES

This interim evaluation was developed using the results of surveillances performed by the Office of EH Residents and other Office of Oversight data sources. The absence of an independent oversight evaluation at SNL/CA suggests that the information presented should not necessarily be considered representative of overall ES&H performance across SNL/CA, but rather an indication of the ES&H performance of the program and/or facility identified. Where sufficient information was not available to make a comprehensive assessment of either the implementation of a guiding principle (Section 2.2) or an implementing program (Section 2.3), a limited evaluation or specific example of performance based on the best available information is provided.

Principle #1 - Line Management Responsibility for Safety

Overall, line management has accepted its responsibility for safety and has been aggressive in its efforts to reduce accidents.

Responsibility is adequately defined; however, the level of effort does not assure comprehensive monitoring of all ES&H commitments. SNL/CA has dedicated adequate resources to hazard management.

KAO does not have any full-time employees assigned at SNL/CA. One Facility Representative visits the site about one week every two months, and a KAO management representative visits the site about once a quarter.

When SNL and KAO have not provided specific guidance and follow up, weaknesses in such programs as suspect/counterfeit parts have developed.

Principle #2 - Comprehensive Requirements

KAO has provided SNL/NM with comprehensive ES&H requirements; however, SNL/NM has not always passed on those requirements to SNL/CA in a timely manner, such as in the case of suspect/counterfeit parts. SNL/CA has not always assured that its actions fully address the safety concerns.

Development of ES&H procedures is sometimes slow and incomplete.

Principle #3 - Competence Commensurate with Responsibilities

The KAO Facility Representative assigned to SNL/CA has an appropriate academic background and is well into completing the Facility Representative qualification program.

Competency of the ES&H personnel has not been raised as an issue.

2.3 IMPLEMENTING PROGRAMS

Environmental Protection Program

Not evaluated.

Nuclear Safety Program

There are no nuclear facilities currently on site.

Worker Safety and Health Program

SNL/CA has demonstrated commitment to the worker safety and health programs. Examples include a well used ES&H hotline program and an active Incident Examination Committee (IEC). The IEC focuses on identification of similar causes and trends, sets goals, and monitors performance.

The Computerized Accident/Incident Reporting System (CAIRS) system does not define SNL/CA injury, illness, loss, and accident rates or relative ranking within the various categories by contractor.

A review of occurrence reports for the period 1993-1995 indicates a downward trend in the number of occurrences. Over the three year period, there were 35 occurrences; in 1995 there were eight. Eight of the occurrences were characterized in the nature of occurrence categories. A detailed breakout of the natue of occurrences is provided below:

- Facility conditions (13) - The two largest subcategories, incorporating 77 percent of the facility condition occurrences, were operations (6) and violations and inadequate procedures (4).

- Cross-category items (16) - Near miss occurrences (8) and potential concerns/ issues (8) were the subcategories.

- Environmental (7) - The subcategories were agreement and compliance (5) and releases (2).

- Safeguards and security (5) - Occurrences were fairly evenly spread among the subcategories.

A review of the direct, contributing, and root causes for the above occurrences showed a marked trend in personnel errors, procedures, and management problems.

Personnel errors accounted for approximately 57 percent of the direct causes, 23 percent of the contributing causes, and 20 percent of the root causes. Procedural problems were cited as approximately 11 percent of the direct causes, 3 percent of the contributing causes, and 20 percent of the root causes. Management problems were cited approximately 9 percent of the time as the direct cause, 29 percent of the time as the contributing cause, and 37 percent of the time as the root cause.

A closer review of the occurrence reports showed that many were associated with incidents occurring in the laboratories; several incidents involved discharges that exceeded the discharge permits; and many were a result of human error (often due to inattention or failure to follow procedures). A relatively high number of near misses was also evident.

Facility Safety Program

Line management uses its Laboratory Assessment Program and its wide range of site expertise to performannual inspections of each facility. This effort results in a positive safety contribution by identifying feedback results and opportunities for improvement.

3.0 SITEWIDE ES&H ISSUES

3.1 ISSUE DESCRIPTIONS

Sitewide Issue 1: Suspect/Counterfeit Parts Program

AL provided KAO a supplemental directive defining the Department's expectations with regard to suspect/counterfeit parts. KAO and SNL/NM have not yet agreed on an implementation plan. SNL/CA purged its stock of suspect fasteners, checked its critical cranes, and instructed itsworkers to purchase only new graded fasteners from qualified suppliers.

However, SNL/CA did not submit an occurrence report describing the hundreds of pounds of suspect parts identified during the purge. KAO, SNL/NM, and SNL/CA have not assessed their program against the supplemental directive, and some recent purchases of graded fasteners were made through non-approved vendors.

Sitewide Issue 2: Exposure to Hydrogen Sulfide

A lawsuit was filed in Alameda County California, on May 27, 1994, based on an apparent exposure to hydrogen sulfide.

This lawsuit was filed by an electrician who, while working in the loft of the CRF, noticed a "rotten egg" smell (characteristic of hydrogen sulfide or H_2S) periodically throughout the day. He did not vacate the area when he detected the smell. On July 22, 1993, the electrician was again working in the loft area when he and others smelled the same odor. The electrician subsequently complained of discomfort in his chest and lungs and a burning sensation in his mouth, nose, and throat. At 2:00 PM he was admitted to the SNL/CA medical facility and at 2:50 PM he was transported to Valley Memorial Hospital in Livermore for further treatment. The electrician did not return to work following this incident.

The Type B investigation concluded that the root cause of this incident was that the SNL/CA management systems, and the degree to which they are implemented, were less than adequate.

On August 16, 1995, KAO documented its follow up and closed out of all but one of the 20 milestones made in response to the five recommendations of the Type B investigation. Operating procedure 471639, Operating Procedure for Routine Roof Access was approved and signed on March 11, 1996.

Sitewide Issue 3: Conduct Of Operations

Recent conduct of operations events indicate an adverse occupational safety trend.

During the last three years, eight conduct of operations events have had adirect impact on occupational safety. Representative examples include fume hood and gas storage cabinet exhaust blowers being inadvertently turned off, emergency power breakers being secured, and effluents being released while individuals were working on top of buildings in the vicinity of the release ducts. Other events involving roof maintenance are:

- On July 18, 1995, two workers on top of Building 910 were exposed to a gaseous odor that caused them discomfort.

- On July 29, 1995, an experimenter discovered that an exhaust blower servicing a toxic and corrosive gas cabinet in

Laboratory 132 (within Building 906) had been manually turned off.

Both incidents were investigated. Actions to implement a formalized procedure for maintenance activities on roofs have been established and will be issued in March 1996.

Sitewide Issue 4: Oil Spill

In the early 1970s a large oil tank and associated piping were installed during the fuel oil shortages. In 1975, a transfer line was punctured, and about 60,000 gallons of No. 2 diesel oil flowed into the ground. A bioremediation program is in progress and should be completed by October 1999.

3.2 SITEWIDE ISSUE STATUS

Table 1 characterizes sitewide issues in terms of an issue statement, primary concerns, site activities, and a progress evaluation.

4.0 KEY FACILITIES

4.1 FACILITY MISSION

Combustion Research Facility (CRF), Buildings 904, 905, 906, 907

This is a non-nuclear facility with a number of support buildings. Its current and future use is combustion research. The operations at the CRF present no unique hazards or risks to the public or workers. The June 1995 site review determined that the design and operation of the CRF, and the materials and equipment used in the CRF (quantities and types), result in an acceptable level of risk for cumulative effects.

Projects range from basic research on chemical reactivity, fluid dynamics, and state-of-the-art computational modeling to applied studies that support industry's needs in such areas as engines, furnaces, and materials processing. Projects involve lasers, combustible fuels (liquids, solids, and gases), and laboratory-scale apparatus for burning fuels. These burners range from very small burners to large, single-unit industrial burners.

The CRF is composed of a complex of four buildings: Building 904, Auditorium; Building 905, CRF Offices; Building 906, CRF Laboratories; and Building. 907, Utilities Engineering/Equipment Facilities and support. During the summer many

assignees, visiting scholars, scientists, and students conduct research or experiments in the laboratories.

Explosive Storage and Testing Facilities

The explosive storage and testing facilities are a series of non-nuclear buildings used to store and test explosives and components that use explosives.

The maximum explosive storage weight of the five largest magazines are 100 pounds of TNT equivalent each. The smaller magazines (M-2 and 5) are rated at 50 pounds of TNT equivalent. Magazetts are limited to 1 pound each.

4.2 FACILITY SUMMARY

Table 2 summarizes key facility characteristics, including status, hazard classification, authorization basis, worst case design basis accident, and principal hazards and vulnerabilities.

5.0 PERFORMANCE MEASURES

This section is being developed and will be presented in future versions of the site profile.

Table 1. Sitewide Issues

ISSUE	PRIMARY CONCERNS	SITE ACTIVITIES	PROGRESS EVALUATION
1. SNL/CA has not fully implemented the suspect/counterfeit parts program required by DOE.	Failure to implement these precautions may result in the use of suspect parts and potential increase in risk.	The site stores were purged in 1994. Critical cranes have been inspected. Practical controls of electrical breakers have been implemented.	Not evaluated. This issue remains open pending an Office of Oversight report. **(updated 5/96)**
2. A lawsuit was filed in Alameda County, California, on May 27, 1994, based on apparent exposure to hydrogen sulfide.	DOE and subcontractors may incur liability as a result of this lawsuit.	Needs were identified to: • Improve conduct of operations at the CRF to ensure that work is performed in a well understood and controlled manner, with appropriate formality and discipline; • Improve access control to SNL/CA facilities to strengthen the protection of workers; and • Improve the employee knowledge and performance in response to off-normal conditions to ensure that responses are appropriate and that potential consequences are minimized. A draft SNL/CA policy is in progress for controlling access to roof areas to ensure the health and safety of personnel. Essentially, this policy describes the approved method for roof access to all structures (buildings, office trailers, and mobiles) owned or operated by SNL/CA. "Roof access" is defined as going onto any level of a structure's roof.	Corrective actions instituted have not been fully effective. See "Issue 3" on "site-wide trends in conduct of operations." A Type B investigation was completed pursuant to DOE Order 5000.3B. As a result of the Type B investigation, a corrective action plan was established. **(updated 5/96)**

Table 1 (cont'd). Sitewide Issues

ISSUE	PRIMARY CONCERNS	SITE ACTIVITIES	PROGRESS EVALUATION
3. Recent conduct of operations events indicate an adverse occupational safety trend.	Informal operations can lead to unplanned exposures and potential injury to facility staff.	Maintenance Engineering Department has the lead for developing corrective actions.	Corrective actions have not been effective, as evidenced by recent events. **(updated 5/96)**
4. In 1975, an oil transfer line was punctured and about 60,000 gallons of No. 2 diesel oil flowed into the ground.	Environmental impact; Department image impact.	A bioremediation program is in progress and should be completed by October 1997.	Progress status as reported-not evaluated **(updated 5/96)**

Table 2. Facility Summary

FACILITY NAME	STATUS	HAZARD CLASSIFICATION/ AUTHORIZATION BASIS	WORST CASE DESIGN BASIS ACCIDENT	PRINCIPAL HAZARDS AND VULNERABILITIES
Combustion Research Facility: Buildings 904, 905, 906, 907	Operational	A preliminary hazard assessment was completed for the CRF in June 1995 per DOE Order 5500.3A; a hazards assessment document for SNL/CA was prepared to identify and assess building-specific hazards associated with SNL/CA. Between July 1994 and June 1995, a preliminary hazard assessment was completed for each laboratory. The PHAs for each CRF laboratory were completed between July 1994 and June 1995. The SNL/NM Risk Management Department assessed the CRF on June 29, 1995, and determined a "low hazard" categorization for the facility. A CRF safety documentation determination has not been prepared by responsible CRF management; however, the document is in progress.	Local laboratory release of less than one pound of hazardous materials could result in serious injury and possible death within the facility.	**Hazards:** Electrical; chemical: (boron trichloride, cyanogen bromide, hydrogen peroxide >52%, hydrogen sulfide, malononitrile, methyl bromide, methyltrichlorosilane, nitrobenzene, nitrogen dioxide, nitrogen oxide, phenol, phosphorus pentoxide [solid], titanium tetrachloride); pressure; lasers,(Class III and IV); flammables (gas and liquid), hydrogen trailer; and hard vacuum. **Vulnerabilities:** Earthquakes; visiting experimenters.
Explosive Storage and Testing Facilities	Operational	Classified as standard industrial type hazards by SNL/CA. Preliminary hazards assessments were prepared between August 1994 and June 1995.	Accidental detonation during handling could result in up to six deaths on site.	**Hazards:** Explosives, high pressure gas, chemicals, mechanical and electrical industrial hazards. **Vulnerabilities:** Earthquakes; lightning; transmission line failure; rupture of the natural gas line near the buildings.